

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
19 February 2004 (19.02.2004)

PCT

(10) International Publication Number  
**WO 2004/015837 A3**

(51) International Patent Classification<sup>7</sup>: **H02J 33/00**,  
G06F 17/60

(21) International Application Number:  
PCT/GB2003/003338

(22) International Filing Date: 31 July 2003 (31.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0218452.1 8 August 2002 (08.08.2002) GB

(71) Applicant and

(72) Inventor: LAL, Depak [GB/GB]; 3, Home Ground,  
Cricklade, Wiltshire SN6 6JG (GB).

(74) Agent: BUTLER, Michael, John; Frank B. Dehn & Co.,  
179 Queen Victoria Street, London EC4V 4EL (GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

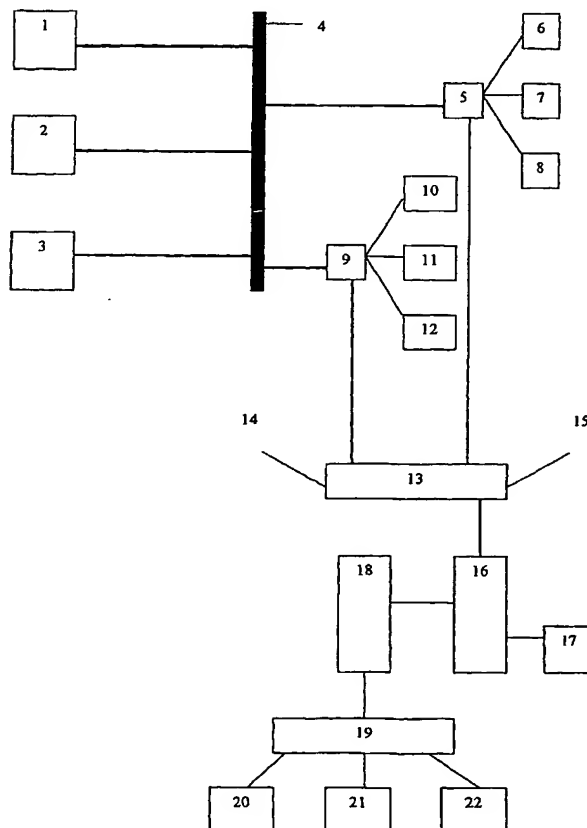
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: ENERGY CONSUMPTION MONITORING



(57) Abstract: A system for analysing energy usage on a network, such as an electricity network (4) which includes a number of energy sources (1, 2, 3) and a number of energy consumers (6, 7, 8, 10, 11, 12) the system including a plurality of meters (5, 9) on the network which monitor energy usage on the network at intervals throughout a day, the meters supplying data to a data processing apparatus (16, 17) which aggregates the data so as to provide an indication of current total energy usage, and which stores data so as to permit the retrieval of historical energy usage for predetermined intervals on days of the year, wherein the data processing apparatus further compares current total energy usage for a particular point or period of time in the year with average historical total energy usage for that point or period of time, and generates an index which indicates the difference between the average historical energy usage and the current total energy usage. A period of time is taken for data to be received from all of the meters (5, 9), and once the data has been received from all of the meters and aggregated, subsequent aggregate totals are calculated at intervals substantially shorter than said period of time using the latest data received from all of the meters. The index can be used to reduce the financial effects of imbalances in a network in which retailers contract for the supply of energy from energy producers. In such an arrangement, the retailer's own demand error is calculated using the commonly applicable index by producers and retailers, to give an indication of the degree of imbalance in the market. Financial derivatives can be used to hedge the financial consequences of imbalances.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(88) Date of publication of the international search report:  
22 July 2004

## INTERNATIONAL SEARCH REPORT

Int. al App. No.

PCT/GB 03/03338

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H02J3/00 G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H02J G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 178 362 B1 (FONG DALE M ET AL) 23 January 2001 (2001-01-23) column 5, line 49 - line 68 column 6, line 1 - line 21 -----	1,7-9,12

☐ Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

## \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

3 February 2004

Date of mailing of the international search report

02 JUN 2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Marannino, E.

## INTERNATIONAL SEARCH REPORT

Inventor's Name

PCT/GB 03/03338

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		AU 6395499 A	10-04-2000
		CA 2303896 A1	30-03-2000
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		WO 0017984 A1	30-03-2000
		US 6636893 B1	21-10-2003
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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB 03/03338

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-9, 12

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9,12

A system for analysing energy usage on a network which includes energy sources and energy consumers, a plurality of meters supplying data to the data processing apparatus which aggregates the data so as to provide an indication of current total energy usage and which stores data so as to permit the retrieval of historical energy usage for points or periods of time in a year wherein the data processing apparatus further compares current total energy usage based on historical energy usage for that point or period of time in a year

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2. claims: 10-11

A system for analysing energy usage comprising data processing apparatus which aggregates the data so as to provide an indication of current total energy usage and wherein a period of time is taken for data to be received from all the meters and once the data has been received from all the meters and aggregated, subsequent aggregate totals are calculated at intervals substantially shorter than said period of time using the latest data received from all the meters.

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